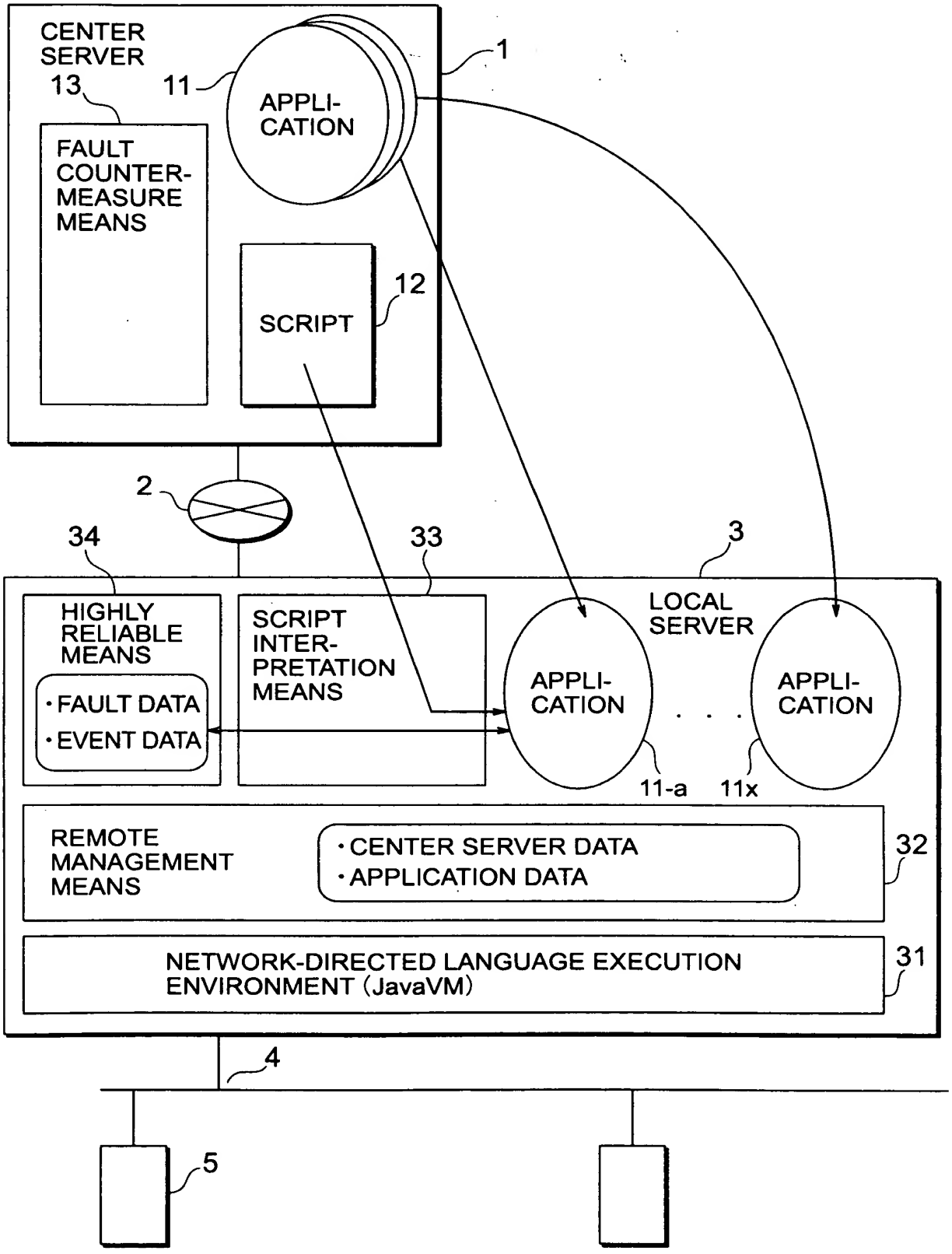
# FIG. 1


CENTER SERVER
13
11
APPLI-CATION
1
FAULT COUNTER-MEASURE MEANS
SCRIPT
12
2
34
33
3
HIGHLY RELIABLE MEANS
• FAULT DATA
• EVENT DATA
SCRIPT INTER-PRETATION MEANS
LOCAL SERVER
APPLI-CATION
APPLI-CATION
11-a
11x
REMOTE MANAGEMENT MEANS
• CENTER SERVER DATA
• APPLICATION DATA
32
NETWORK-DIRECTED LANGUAGE EXECUTION ENVIRONMENT (JavaVM)
31
4
5

# FIG. 2

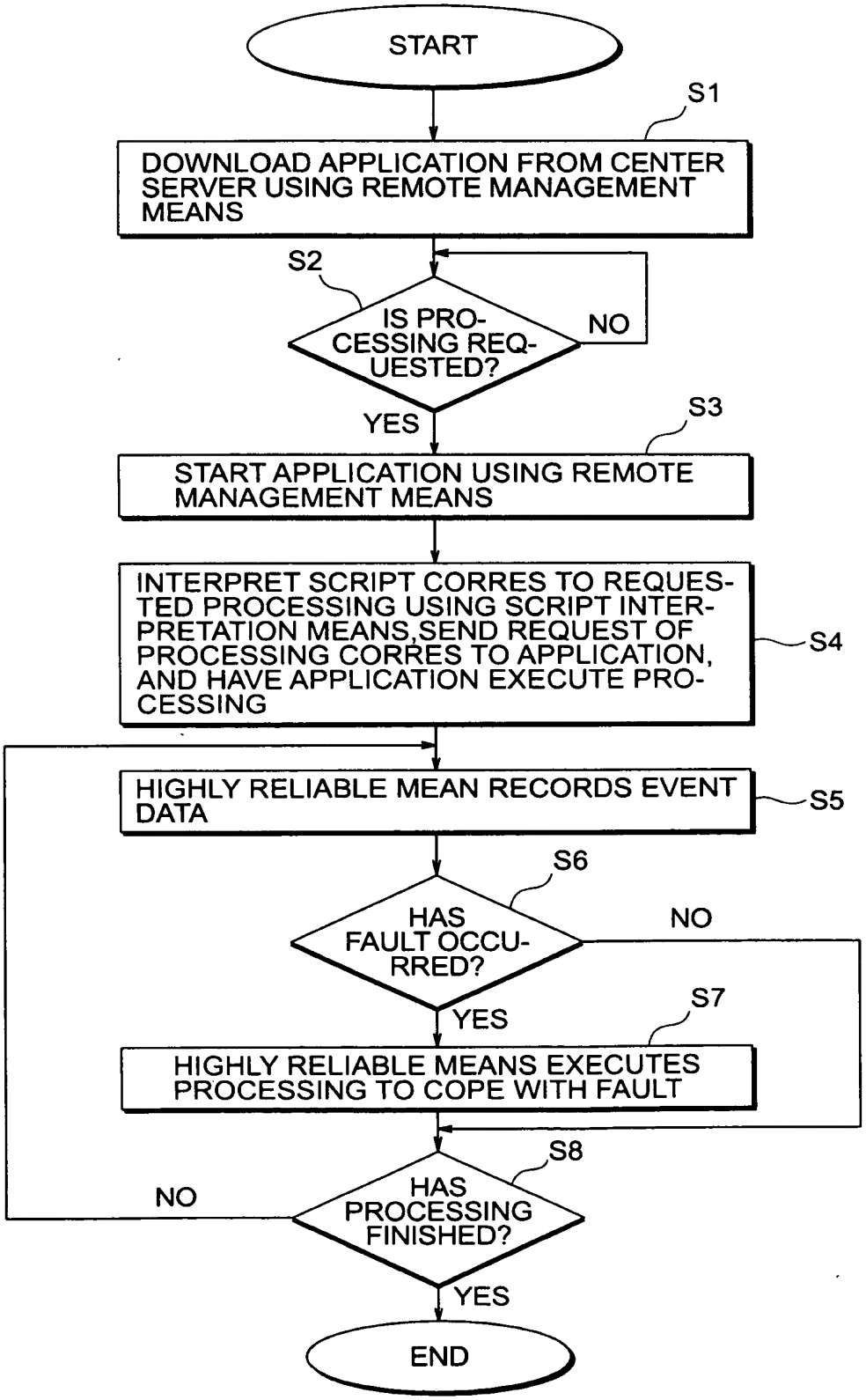

START
S1
DOWNLOAD APPLICATION FROM CENTER SERVER USING REMOTE MANAGEMENT MEANS
S2
IS PRO-CESSING REQ-UESTED?
NO
YES
S3
START APPLICATION USING REMOTE MANAGEMENT MEANS
INTERPRET SCRIPT CORRES TO REQUES-TED PROCESSING USING SCRIPT INTER-PRETATION MEANS,SEND REQUEST OF PROCESSING CORRES TO APPLICATION, AND HAVE APPLICATION EXECUTE PRO-CESSING
S4
HIGHLY RELIABLE MEAN RECORDS EVENT DATA
S5
S6
HAS FAULT OCCU-RRED?
NO
YES
S7
HIGHLY RELIABLE MEANS EXECUTES PROCESSING TO COPE WITH FAULT
S8
HAS PROCESSING FINISHED?
NO
YES
END

FIG. 3

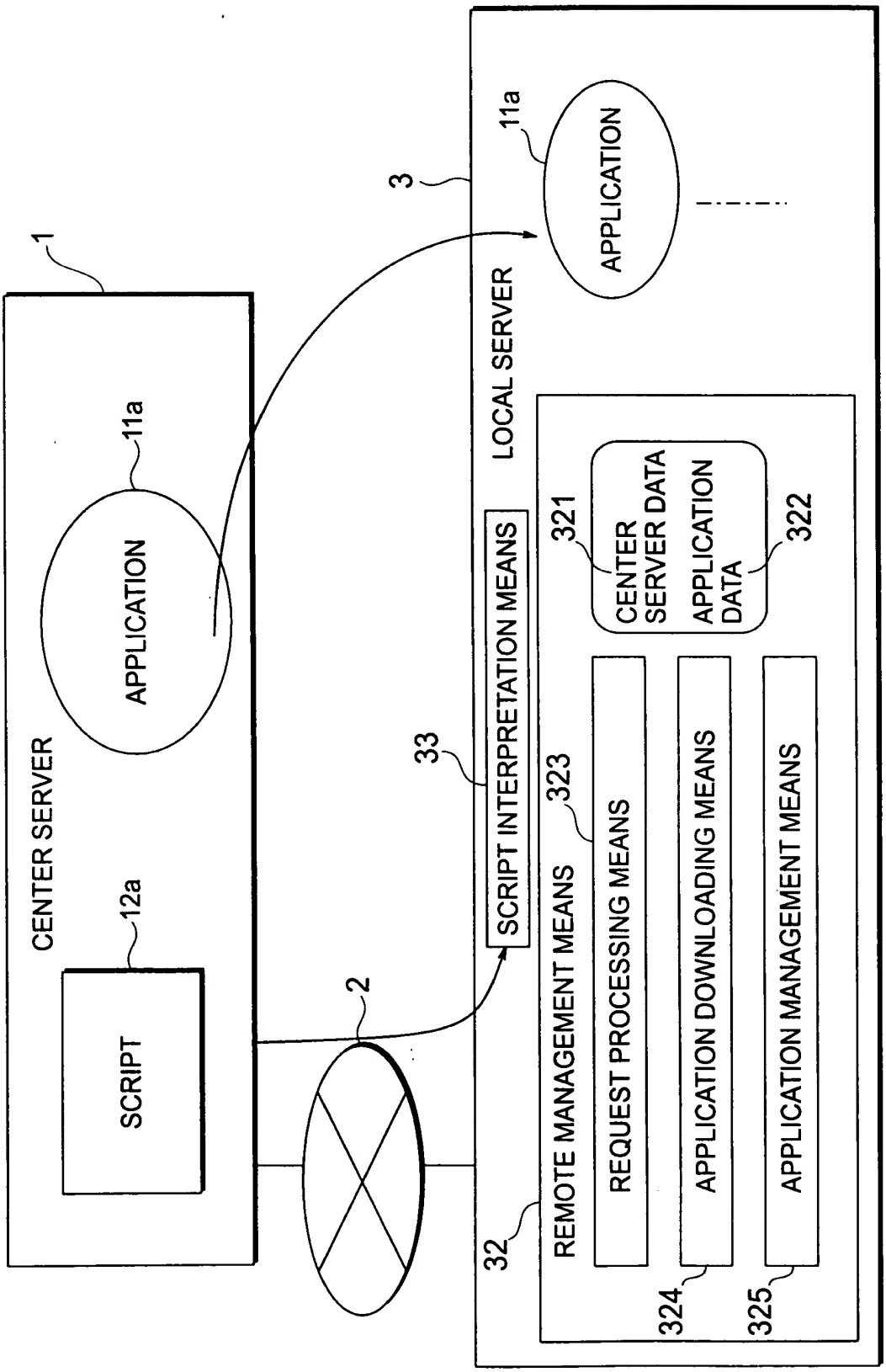

1
CENTER SERVER
11a
APPLICATION
12a
SCRIPT
2
3
LOCAL SERVER
11a
APPLICATION
33
SCRIPT INTERPRETATION MEANS
32
REMOTE MANAGEMENT MEANS
323
REQUEST PROCESSING MEANS
321
CENTER SERVER DATA
322
APPLICATION DATA
324
APPLICATION DOWNLOADING MEANS
325
APPLICATION MANAGEMENT MEANS

FIG. 4

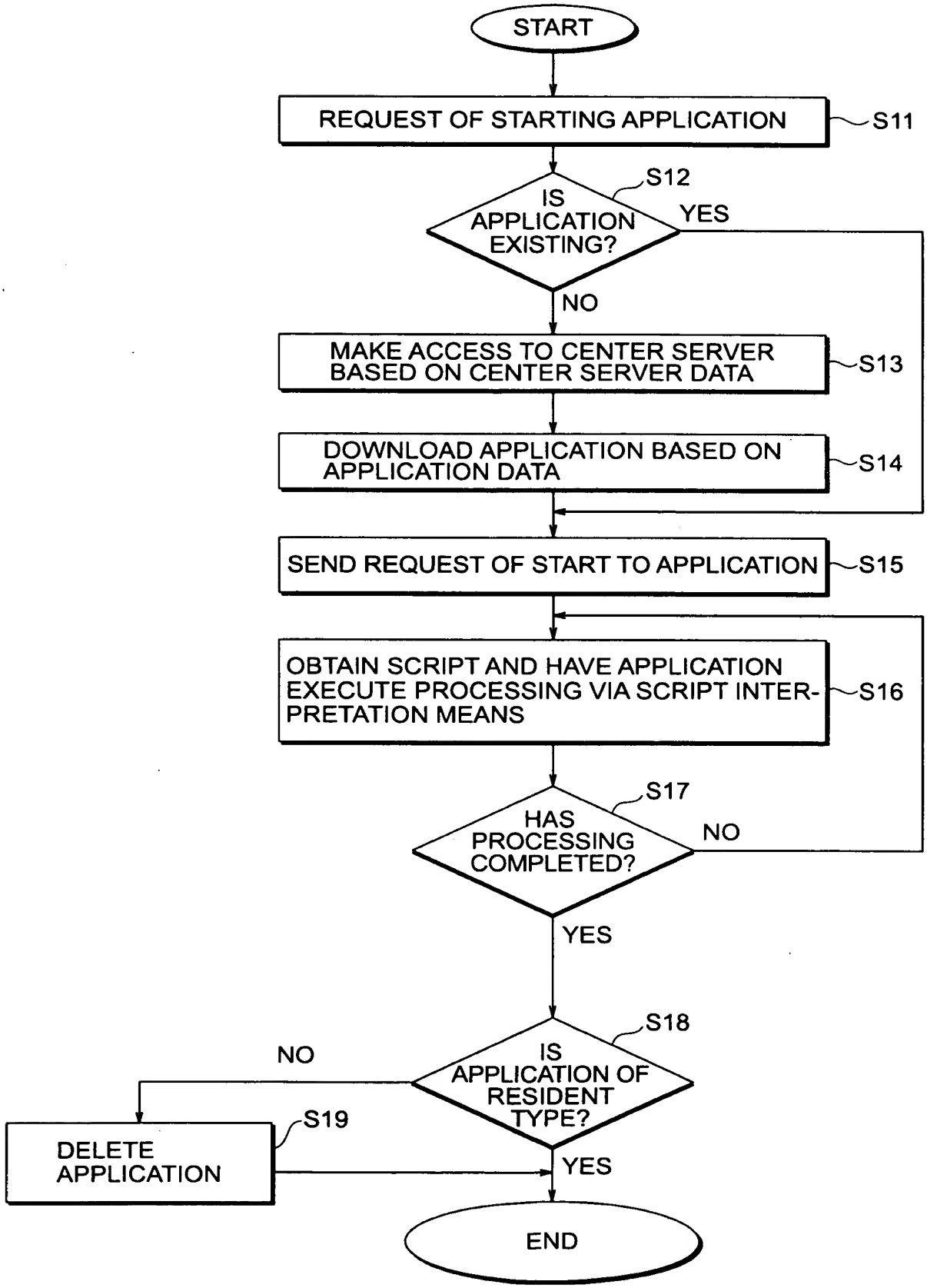

START
REQUEST OF STARTING APPLICATION
S11
S12
IS APPLICATION EXISTING?
YES
NO
MAKE ACCESS TO CENTER SERVER BASED ON CENTER SERVER DATA
S13
DOWNLOAD APPLICATION BASED ON APPLICATION DATA
S14
SEND REQUEST OF START TO APPLICATION
S15
OBTAIN SCRIPT AND HAVE APPLICATION EXECUTE PROCESSING VIA SCRIPT INTER-PRETATION MEANS
S16
S17
HAS PROCESSING COMPLETED?
NO
YES
S18
IS APPLICATION OF RESIDENT TYPE?
NO
S19
DELETE APPLICATION
YES
END

FIG. 5

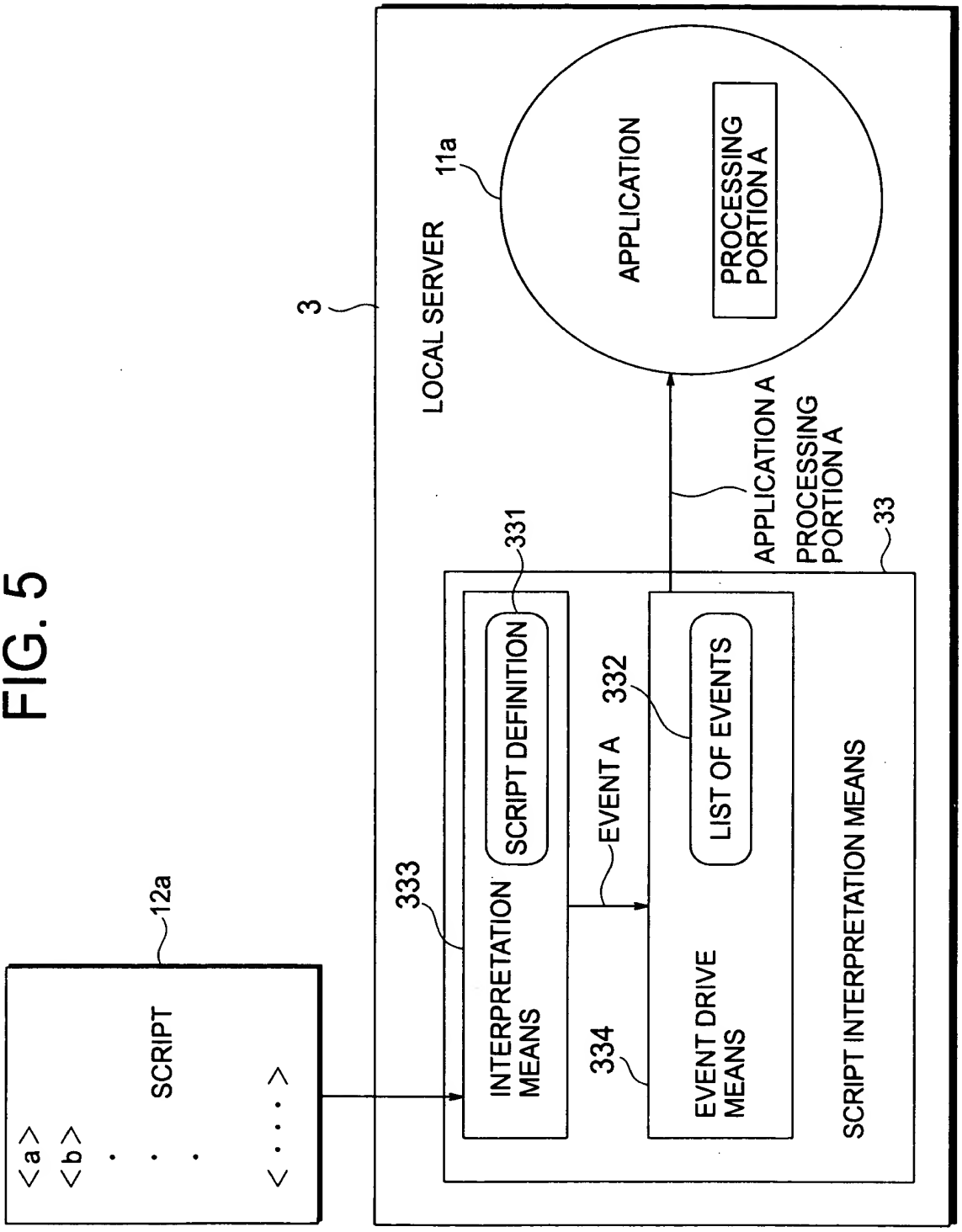

12a
<a>
<b>
SCRIPT
<....>
3
LOCAL SERVER
11a
APPLICATION
PROCESSING PORTION A
APPLICATION A PROCESSING PORTION A
33
331
SCRIPT DEFINITION
333
INTERPRETATION MEANS
EVENT A
332
LIST OF EVENTS
334
EVENT DRIVE MEANS
SCRIPT INTERPRETATION MEANS

FIG. 6

331

| SCRIPT DEFINITION | EVENT |
|---|---|
| ⋮ | |
| <SCRIPT a> | EVENT A |
| ⋮ | |

FIG. 7

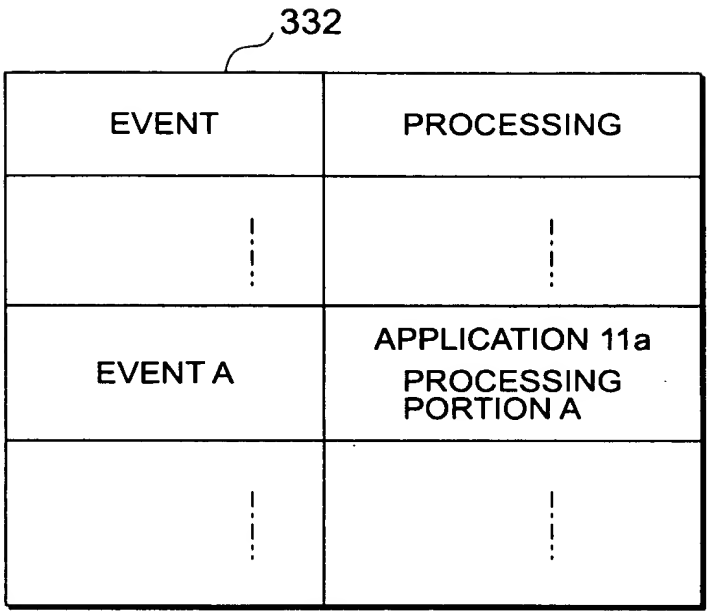

332
EVENT
PROCESSING
EVENT A
APPLICATION 11a
PROCESSING
PORTION A

FIG. 8

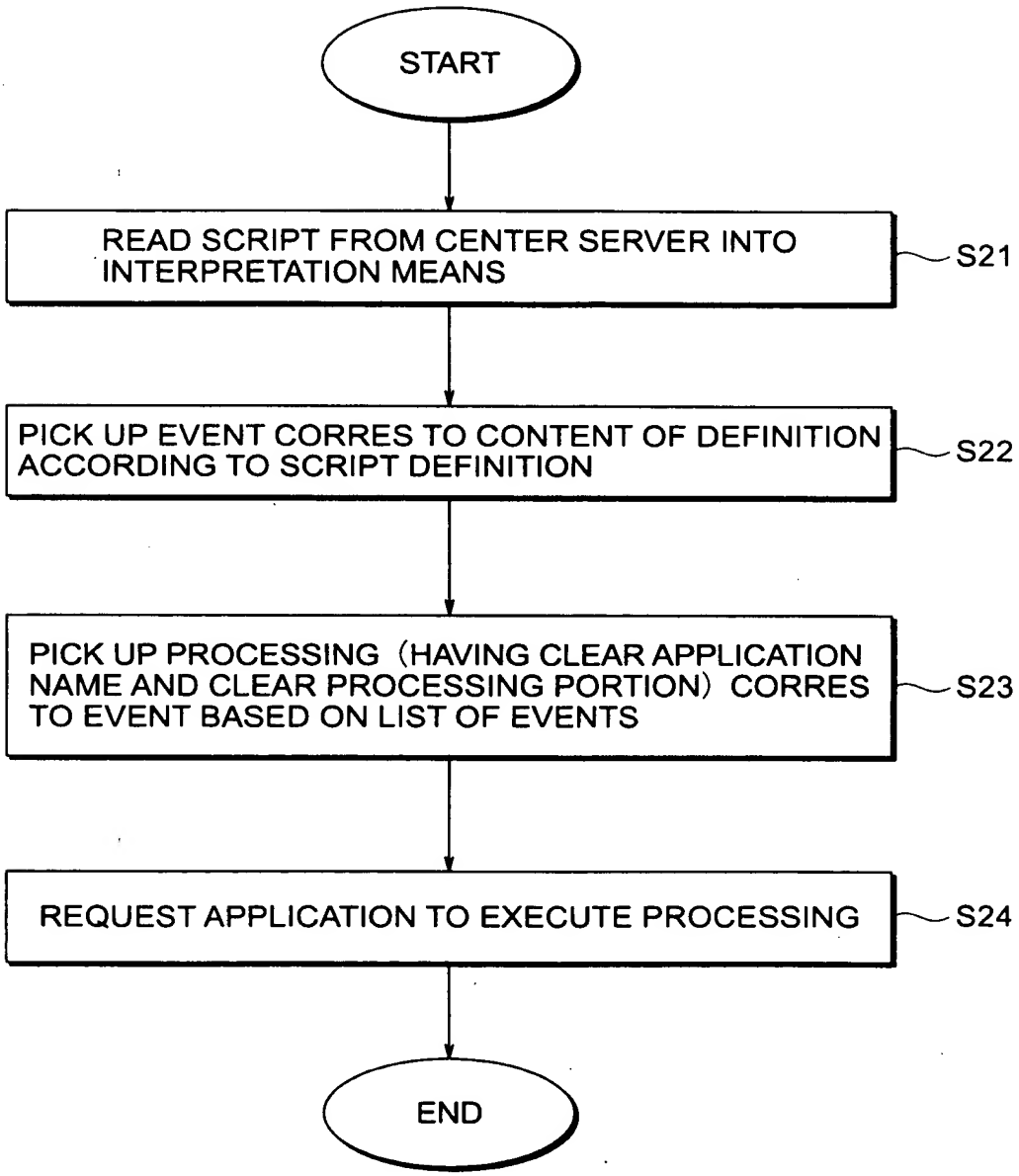

START
READ SCRIPT FROM CENTER SERVER INTO INTERPRETATION MEANS
S21
PICK UP EVENT CORRES TO CONTENT OF DEFINITION ACCORDING TO SCRIPT DEFINITION
S22
PICK UP PROCESSING (HAVING CLEAR APPLICATION NAME AND CLEAR PROCESSING PORTION) CORRES TO EVENT BASED ON LIST OF EVENTS
S23
REQUEST APPLICATION TO EXECUTE PROCESSING
S24
END

FIG. 9

```
<?XML version="1.0" ?>
<AIR CONDITIONER CONTROL>
  <INITIALIZE>
    <AIR CONDITIONER>
      <TEMP.UNIT=CENTIGRADE>28<?TEMP.>
      <WIND VELOCITY>QUIET</WIND VELOCITY>
    </AIR CONDITIONER>
    <TEMP.SENSOR>
          .
          .
    </TEMP.SENSOR>
  </INITIALIZE>
  <AUTO.CONTROL>
          .
          .
  </AUTO.CONTROL>
  </AIR CONDITIONER CONTROL>
```

# FIG. 10

DTD FOR XML DOCUMENT

```
<!DOCTYPE   AIR CONDITIONER CONTROL [
<!ELEMENT   AIR CONDITIONER CONTROL (INITIALIZE,AUTO.CONTROL)
<!ELEMENT   INITIALIZE (AIR CONDITIONER,TEMP.SENSOR) >
<!ELEMENT   AUTO.CONTROL (···) >
<!ELEMENT   AIR CONDITIONER (TEMP.WIND VELOCITY) >
<!ELEMENT   SENSOR (···) >
<!ELEMENT   TEMP. (       ) >
<!ELEMENT   WIND VELOCITY (       ) >
      |
      |
<!ATTRLIST  TEMP.UNIT (CENT | FAHR)"CENT">
```

FIG. 11

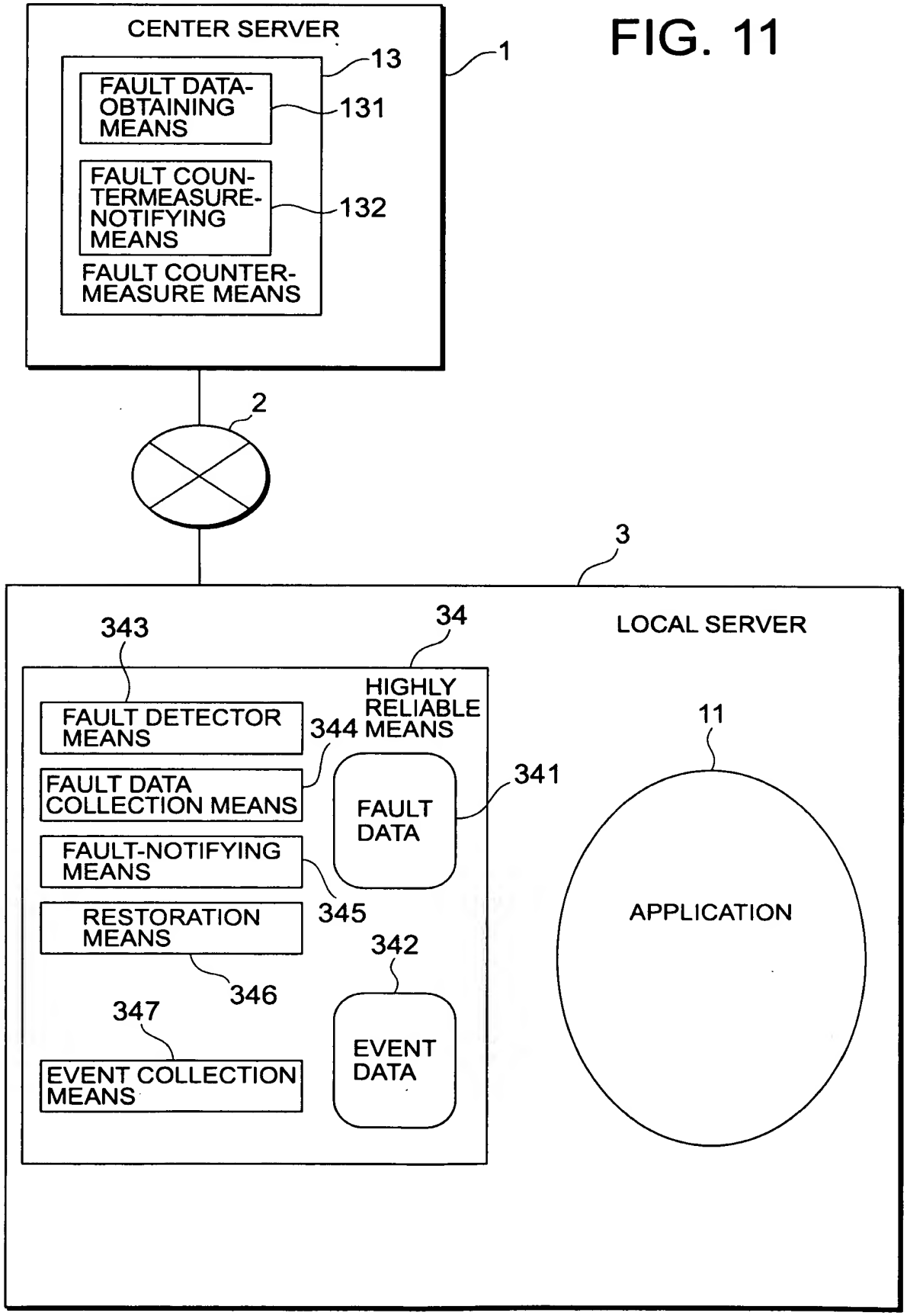

CENTER SERVER
1
13
FAULT DATA-OBTAINING MEANS
131
FAULT COUNTERMEASURE-NOTIFYING MEANS
132
FAULT COUNTER-MEASURE MEANS
2
3
LOCAL SERVER
343
34
HIGHLY RELIABLE MEANS
FAULT DETECTOR MEANS
344
FAULT DATA COLLECTION MEANS
FAULT DATA
341
FAULT-NOTIFYING MEANS
345
RESTORATION MEANS
342
346
347
EVENT DATA
EVENT COLLECTION MEANS
11
APPLICATION

FIG. 12

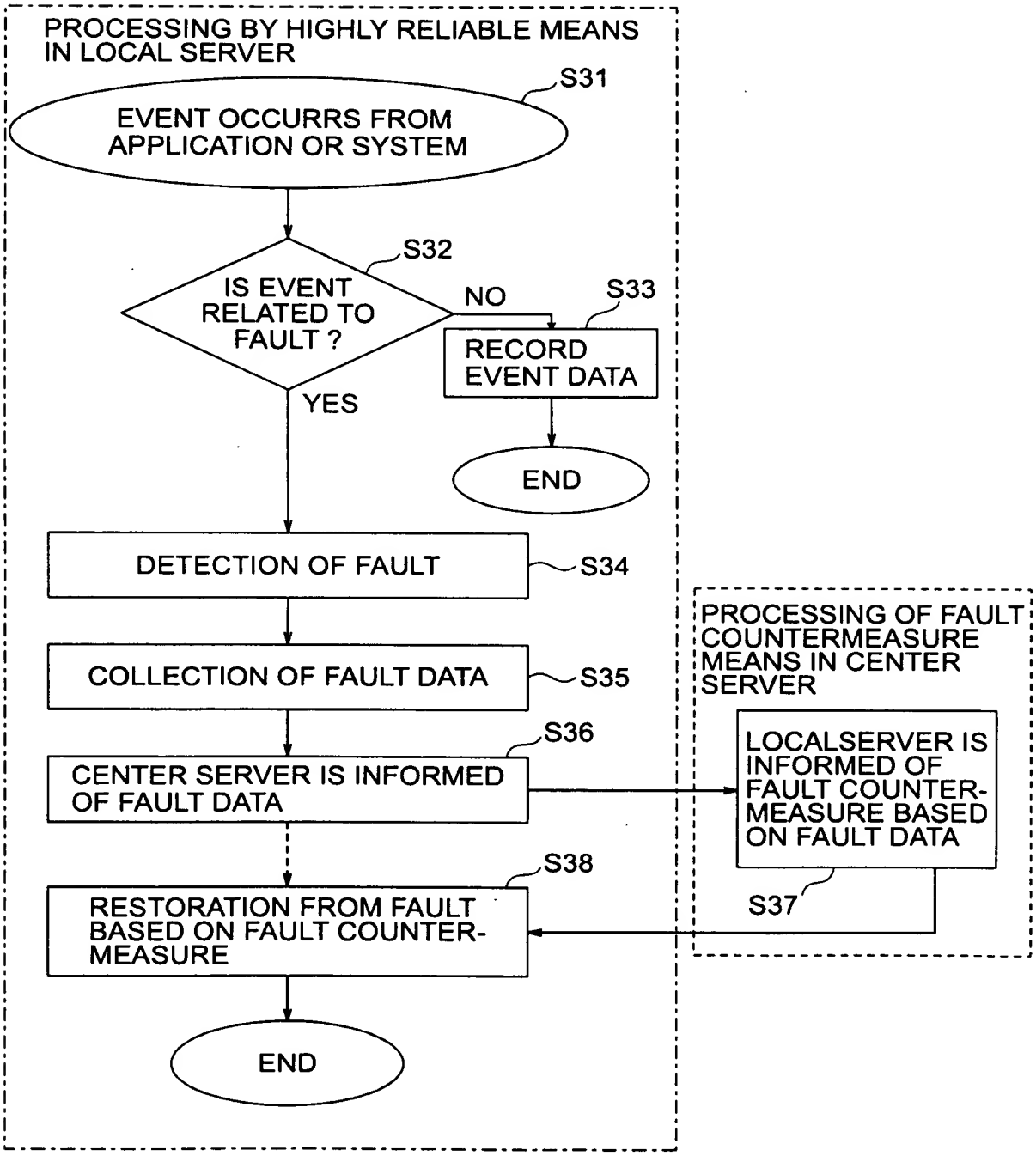

PROCESSING BY HIGHLY RELIABLE MEANS IN LOCAL SERVER
S31
EVENT OCCURRS FROM APPLICATION OR SYSTEM
S32
IS EVENT RELATED TO FAULT ?
NO
S33
RECORD EVENT DATA
END
YES
DETECTION OF FAULT
S34
COLLECTION OF FAULT DATA
S35
S36
CENTER SERVER IS INFORMED OF FAULT DATA
S38
RESTORATION FROM FAULT BASED ON FAULT COUNTER-MEASURE
END
PROCESSING OF FAULT COUNTERMEASURE MEANS IN CENTER SERVER
LOCALSERVER IS INFORMED OF FAULT COUNTER-MEASURE BASED ON FAULT DATA
S37

FIG. 13

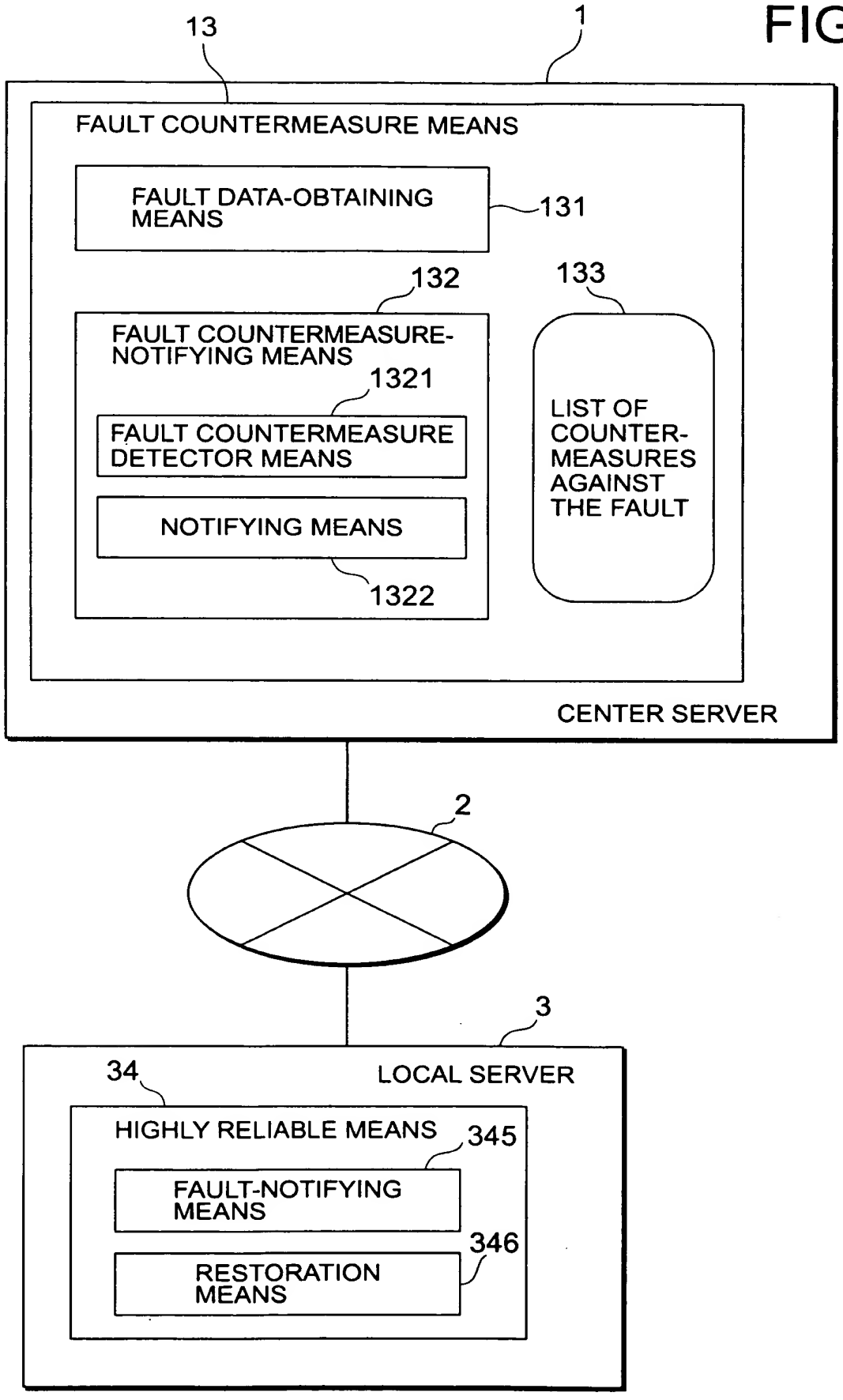

13
1
FAULT COUNTERMEASURE MEANS
FAULT DATA-OBTAINING MEANS
131
132
133
FAULT COUNTERMEASURE-NOTIFYING MEANS
1321
FAULT COUNTERMEASURE DETECTOR MEANS
NOTIFYING MEANS
1322
LIST OF COUNTER-MEASURES AGAINST THE FAULT
CENTER SERVER
2
3
34
LOCAL SERVER
HIGHLY RELIABLE MEANS
345
FAULT-NOTIFYING MEANS
346
RESTORATION MEANS

FIG. 14

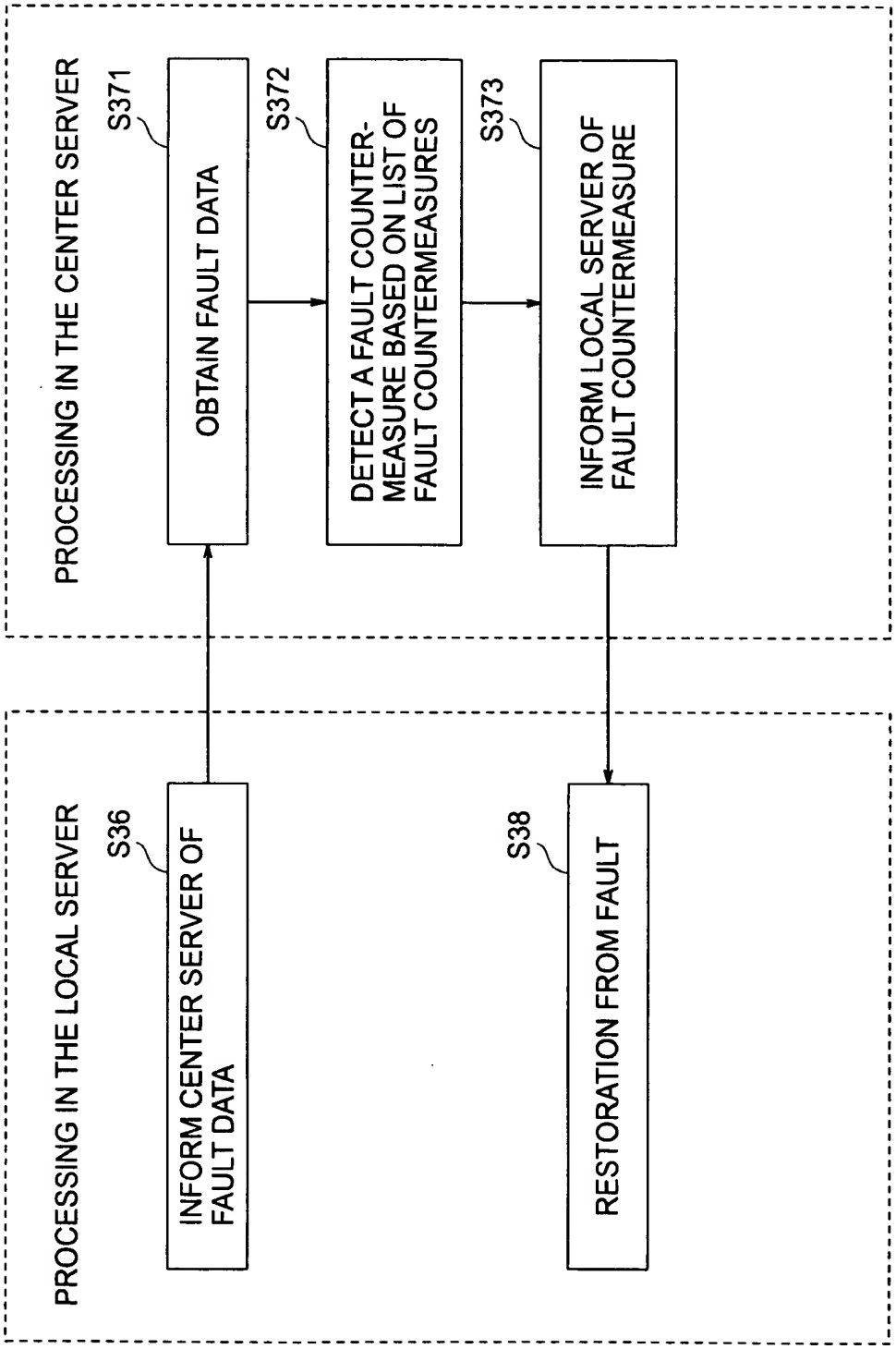
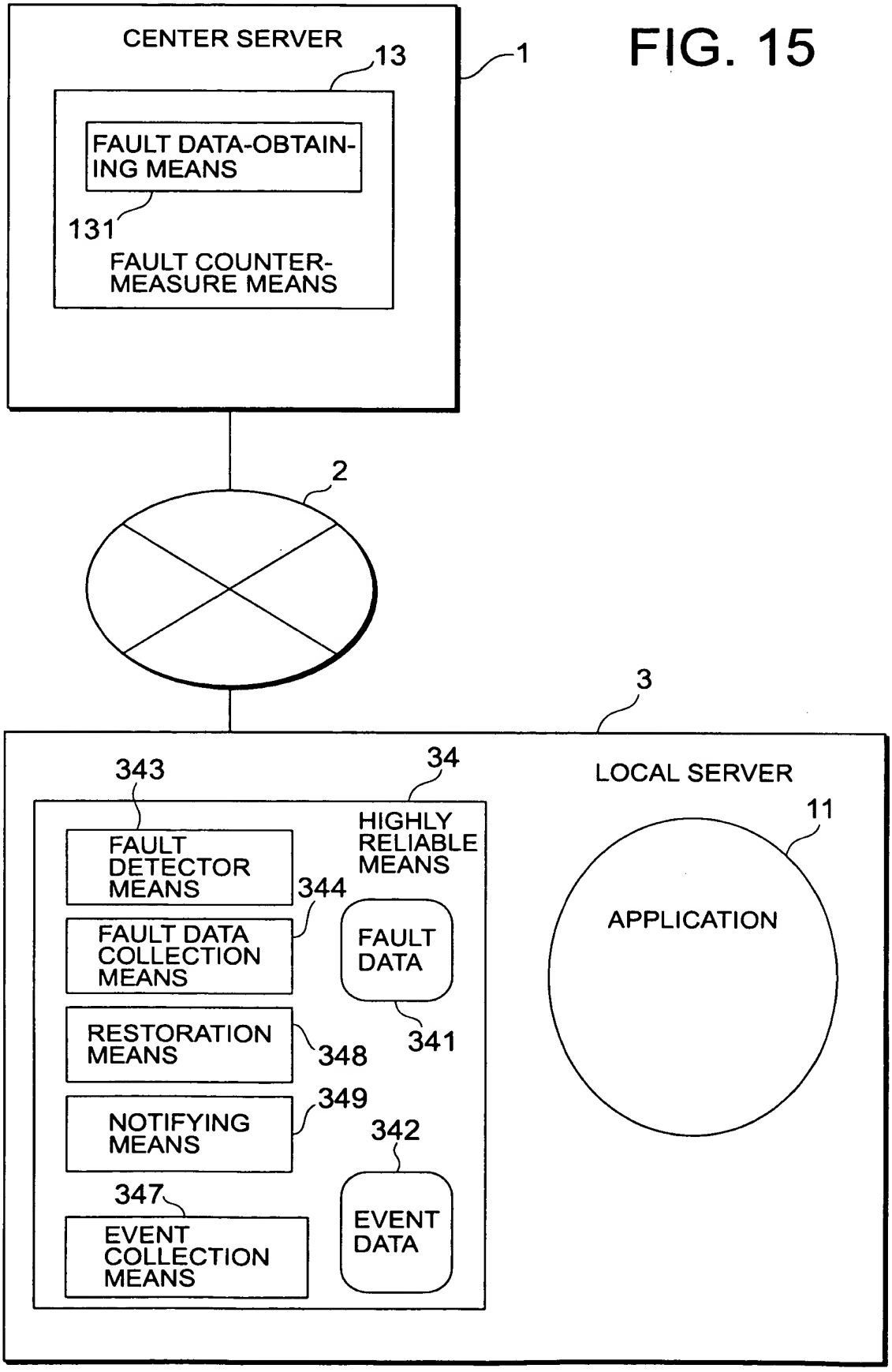

PROCESSING IN THE CENTER SERVER
S371
OBTAIN FAULT DATA
S372
DETECT A FAULT COUNTER-MEASURE BASED ON LIST OF FAULT COUNTERMEASURES
S373
INFORM LOCAL SERVER OF FAULT COUNTERMEASURE
PROCESSING IN THE LOCAL SERVER
S36
INFORM CENTER SERVER OF FAULT DATA
S38
RESTORATION FROM FAULT

FIG. 15


CENTER SERVER
13
1
FAULT DATA-OBTAIN-ING MEANS
131
FAULT COUNTER-MEASURE MEANS
2
3
343
34
LOCAL SERVER
HIGHLY RELIABLE MEANS
11
FAULT DETECTOR MEANS
344
FAULT DATA COLLECTION MEANS
FAULT DATA
APPLICATION
341
RESTORATION MEANS
348
349
NOTIFYING MEANS
342
347
EVENT COLLECTION MEANS
EVENT DATA

# FIG. 16

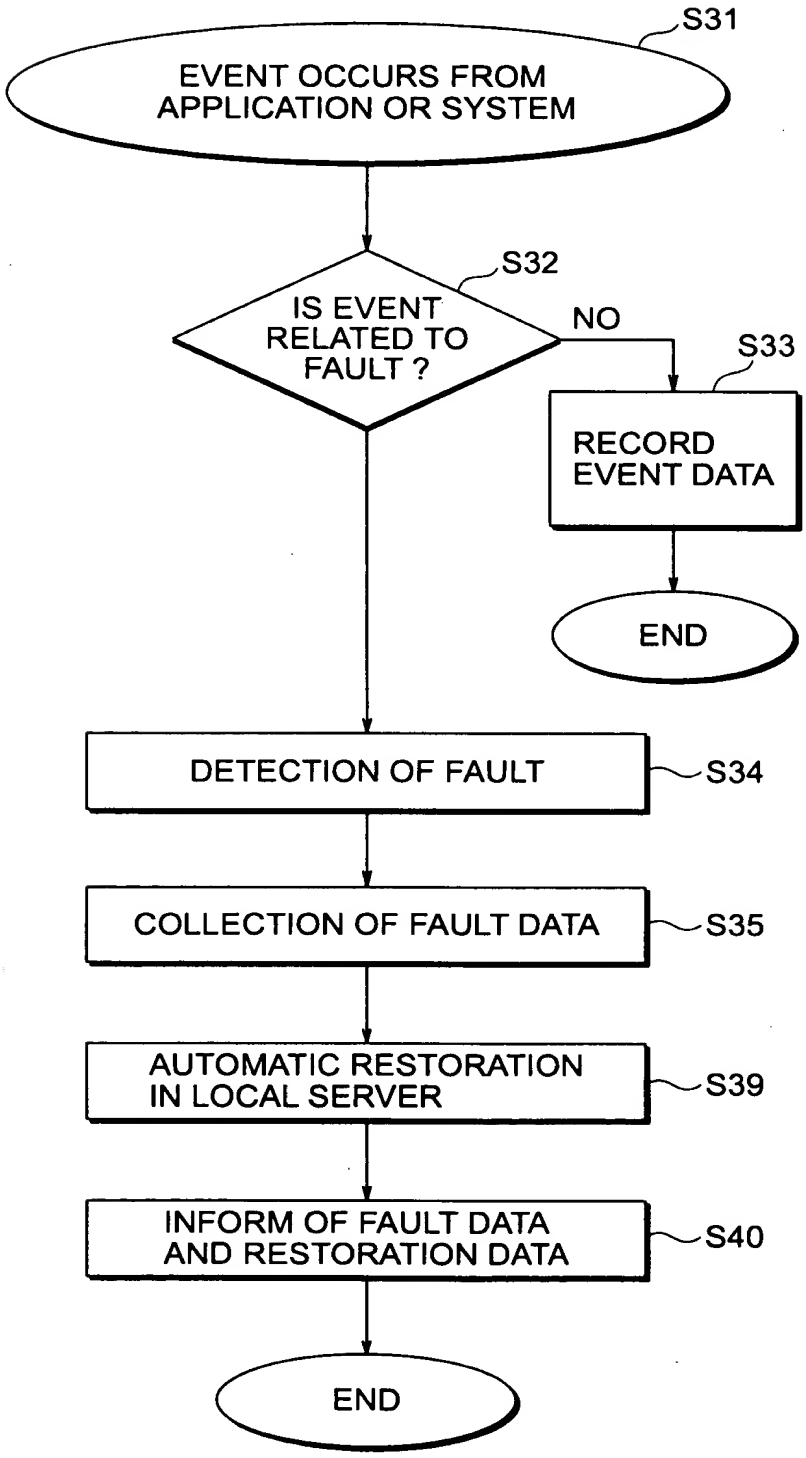

S31
EVENT OCCURS FROM APPLICATION OR SYSTEM
S32
IS EVENT RELATED TO FAULT ?
NO
S33
RECORD EVENT DATA
END
DETECTION OF FAULT
S34
COLLECTION OF FAULT DATA
S35
AUTOMATIC RESTORATION IN LOCAL SERVER
S39
INFORM OF FAULT DATA AND RESTORATION DATA
S40
END

FIG. 17

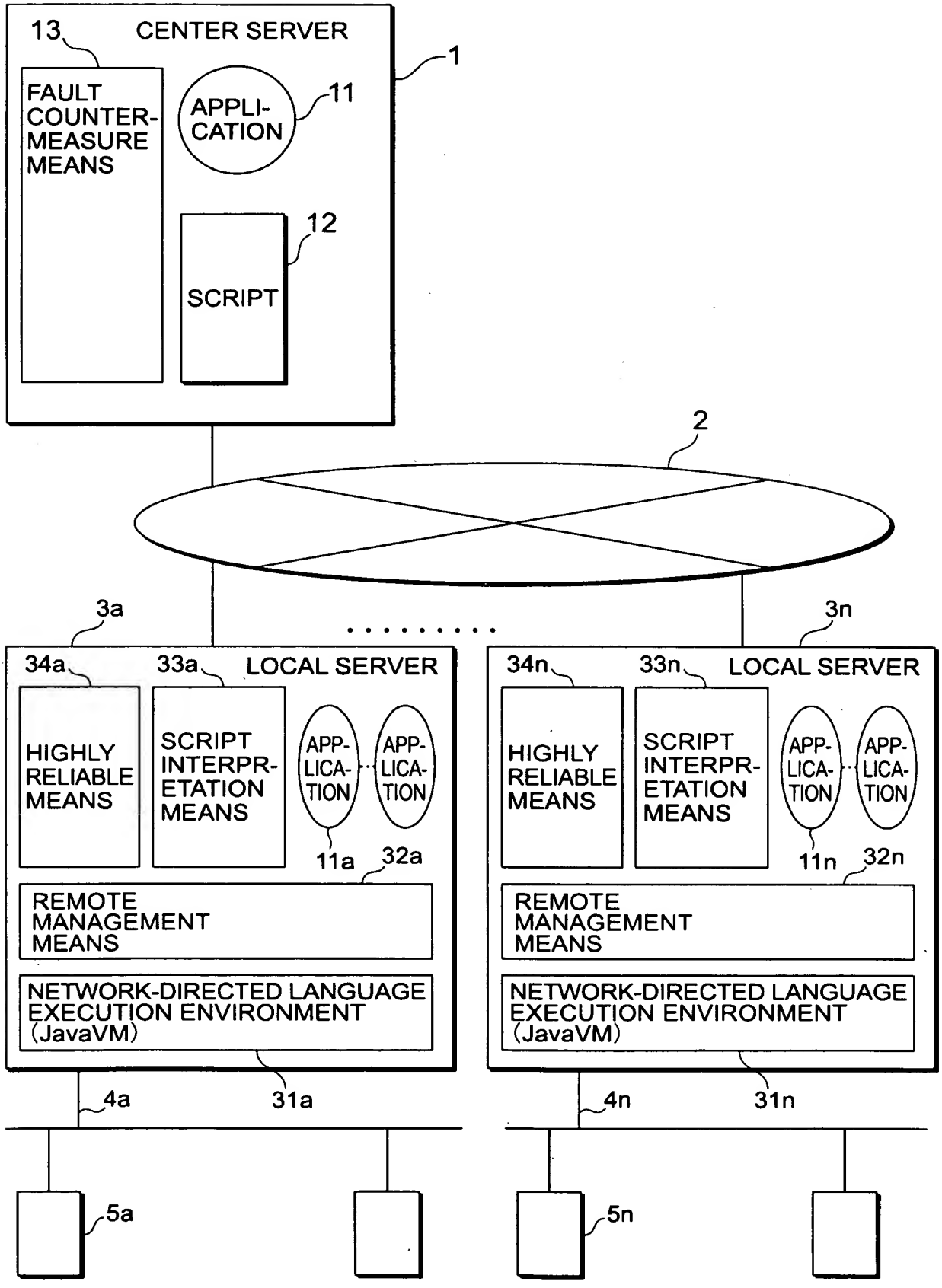

13
CENTER SERVER
1
FAULT COUNTER-MEASURE MEANS
APPLI-CATION
11
12
SCRIPT
2
3a
3n
34a
33a
LOCAL SERVER
34n
33n
LOCAL SERVER
HIGHLY RELIABLE MEANS
SCRIPT INTERPR-ETATION MEANS
APP-LICA-TION
APP-LICA-TION
11a
32a
11n
32n
REMOTE MANAGEMENT MEANS
NETWORK-DIRECTED LANGUAGE EXECUTION ENVIRONMENT (JavaVM)
4a
31a
4n
31n
5a
5n

FIG. 18

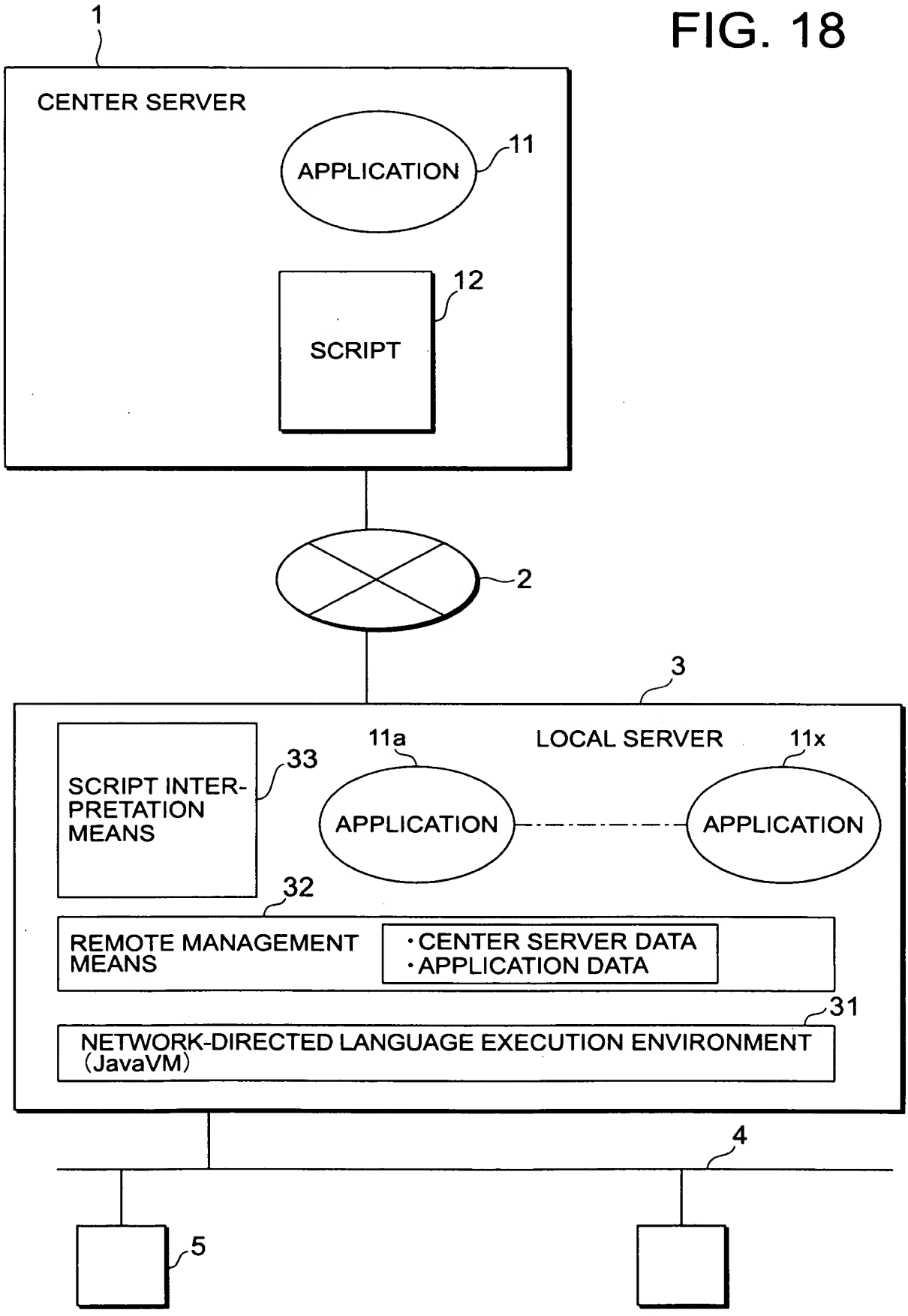

1
CENTER SERVER
APPLICATION
11
12
SCRIPT
2
3
SCRIPT INTER-PRETATION MEANS
33
11a
LOCAL SERVER
11x
APPLICATION
APPLICATION
32
REMOTE MANAGEMENT MEANS
• CENTER SERVER DATA
• APPLICATION DATA
31
NETWORK-DIRECTED LANGUAGE EXECUTION ENVIRONMENT (JavaVM)
4
5

FIG. 19

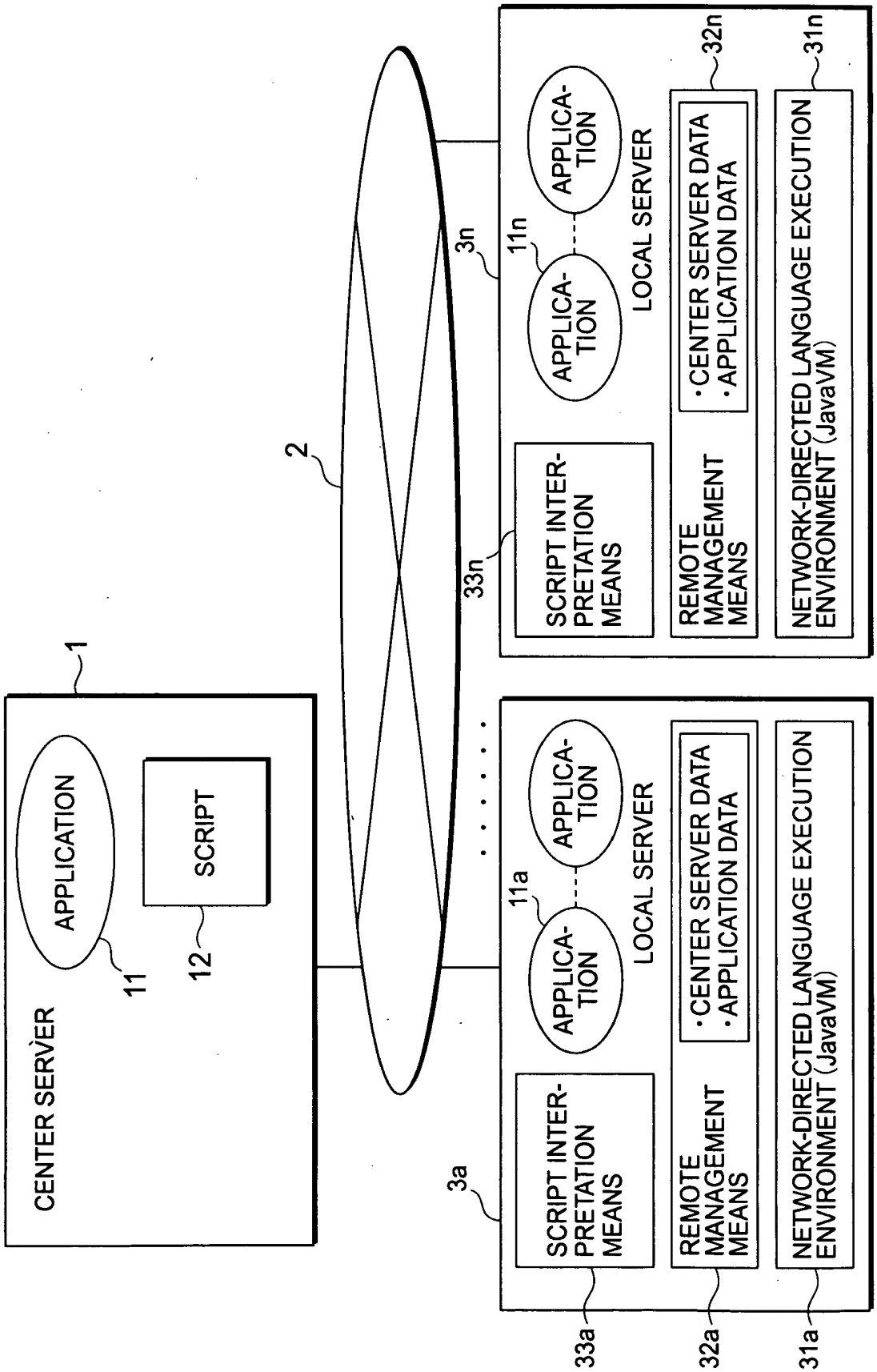
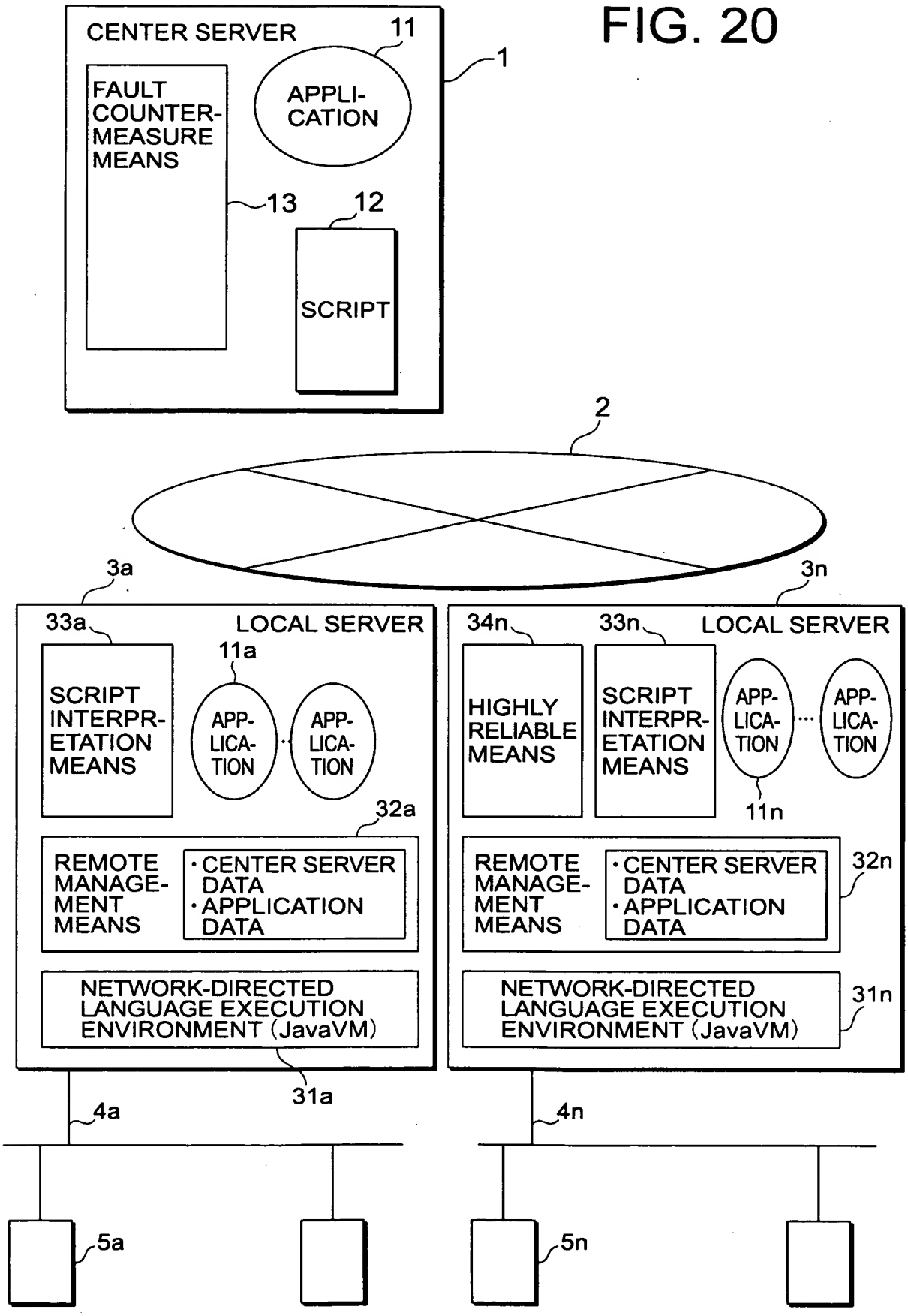

CENTER SERVER
1
APPLICATION
11
SCRIPT
12
2
3a
3n
LOCAL SERVER
APPLICA-TION
11a
11n
SCRIPT INTER-PRETATION MEANS
33a
33n
REMOTE MANAGEMENT MEANS
32a
32n
·CENTER SERVER DATA
·APPLICATION DATA
NETWORK-DIRECTED LANGUAGE EXECUTION ENVIRONMENT (JavaVM)
31a
31n

FIG. 20


CENTER SERVER
11
1
FAULT COUNTER-MEASURE MEANS
APPLI-CATION
13
12
SCRIPT
2
3a
3n
33a
LOCAL SERVER
11a
SCRIPT INTERPR-ETATION MEANS
APP-LICA-TION
APP-LICA-TION
32a
REMOTE MANAGE-MENT MEANS
· CENTER SERVER DATA
· APPLICATION DATA
NETWORK-DIRECTED LANGUAGE EXECUTION ENVIRONMENT (JavaVM)
31a
34n
33n
LOCAL SERVER
HIGHLY RELIABLE MEANS
SCRIPT INTERPR-ETATION MEANS
APP-LICA-TION
APP-LICA-TION
11n
32n
REMOTE MANAGE-MENT MEANS
· CENTER SERVER DATA
· APPLICATION DATA
NETWORK-DIRECTED LANGUAGE EXECUTION ENVIRONMENT (JavaVM)
31n
4a
4n
5a
5n